

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 November 2004 (04.11.2004)

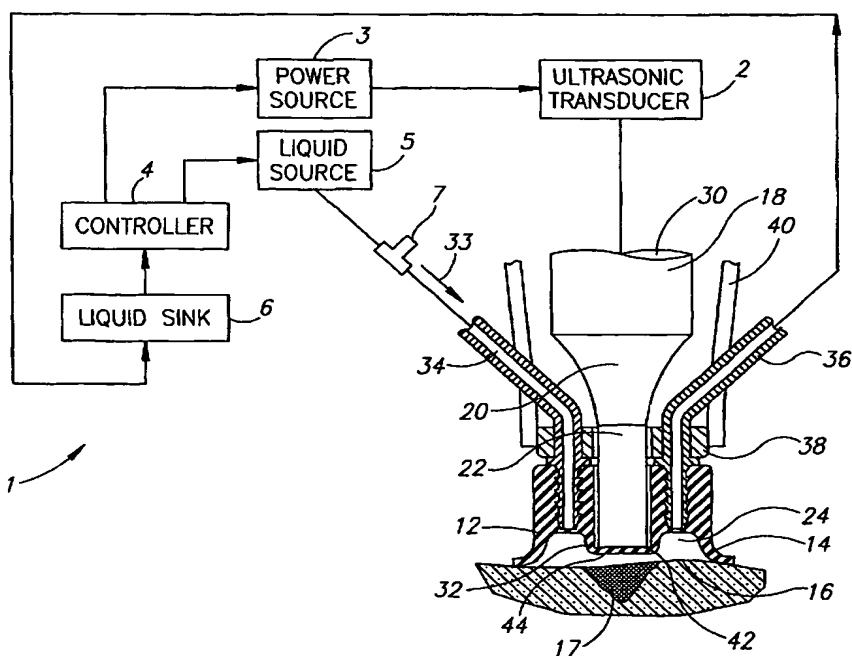
PCT

(10) International Publication Number
WO 2004/093972 A3

- (51) International Patent Classification⁷: **A61H 5/00**, (74) Agents: FENSTER, Paul et al.; FENSTER & COMPANY, INTELLECTUAL PROPERTY 2002 LTD., P.O. BOX 10256, 49002 PETACH TIKVA (IL).
A61B 17/22
- (21) International Application Number: PCT/IL2004/000344
- (22) International Filing Date: 22 April 2004 (22.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 155546 22 April 2003 (22.04.2003) IL
- (71) Applicant (for all designated States except US): HEAL-FUS LTD. [IL/IL]; ZEMACH, 15132 EMEK HAYARDEN (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): GELLER, Benjamin [IL/IL]; 17/36 SHLOMO KLEIN STREET, 24600 AKKO (IL). LIBERSON, Roman, D. [IL/IL]; 111/3 HAAZMAUT STREET, 28219 KIRYAT ATA (IL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR TREATMENT OF DAMAGED TISSUE



(57) Abstract: Apparatus for the ultrasonic treatment of tissue, including: a housing having a space therewithin and an opening adapted for placement against the tissue, the housing being adapted for introducing liquid therein such that when so placed, the space is filled with liquid; and an ultrasonic power source that introduces ultrasonic vibrations toward the damaged tissue, said vibrations having a frequency and power level sufficient to produce cavitation of the liquid at or near the surface of the tissue.



Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:

29 December 2004

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL04/00344

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61H 5/00; A61B 17/22

US CL : 601/4; 604/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 601/4; 604/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,234,990 B1 (ROWE et al.) 22 May 2001 (22.05.2001), See entire document.	1-3, 8-11, 17-21, 23, 26, 28 and 32-34
---		-----
Y		4-7, 12-16, 22, 24, 25, 27, 30 and 31
---		-----
Y	US 5,279,282 A (OPPELT) 18 January 1994 (18.01.1994), See entire document.	12-16
---		-----
A	US 4,515,583 A (SORICH) 07 May 1985 (07.05.1985), See entire document.	1-34
---		-----

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

01 November 2004 (01.11.2004)

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Date of mailing of the international search report

22 NOV 2004

Authorized officer

Shawna J. Shaw

Telephone No. (703) 308-0858